ARI Hetra Lifting System

180th Transportation Battalion

Model Services Motorpool Project

16 March 2000

The ARI Hetra Lift can be used for all wheeled vehicles under 30 ton curb weight. The Model Service Motorpool project will be using these lifts to raise the Army's M1000 semi-trailer, M1070 Heavy Equipment Transporter, M984 HEMTT wrecker, and M978 HEMTT fuel tanker.

The following pictures are from an operator training session given by ARI Hetra Lifting Systems. They demonstrate some of the applications and benefits of using this system.

M1000 Heavy Equipment Transporter (HET) semi-trailer

Curb Weight (empty): 25 tons

Lifted at bottom of trailer deck.

Deck height at lifting point (normal setting): 43 inches

Deck height at lifting point (lowest setting): 34 inches

Maximum lifting height: 38 inches

Allows all wheels to be pulled simultaneously without isolating bogeys or using trailer hydraulics. All bogeys can also be rotated to inspect inner

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For safety reasons, the gooseneck is supported by an ARI stand. The stands can also be used to support a lifted vehicle and have the same capacity as the lifts. The stand has a

It is clear to see how raising the trailer would make services and maintenance much easier for the mechanic. Additionally, working under the trailer is

Heavy Expanded Mobility Tactical Trucks

M984 HEMTT Wrecker & M978 HEMTT 2500 gallon Tanker

Curb Weight (empty): 25 tons (M984)

Lifted at first and fourth axles.

Maximum lifting height: 72 inches

Raising the HEMTT series truck allows soldiers to access the undercarriage in the standing position, allowing

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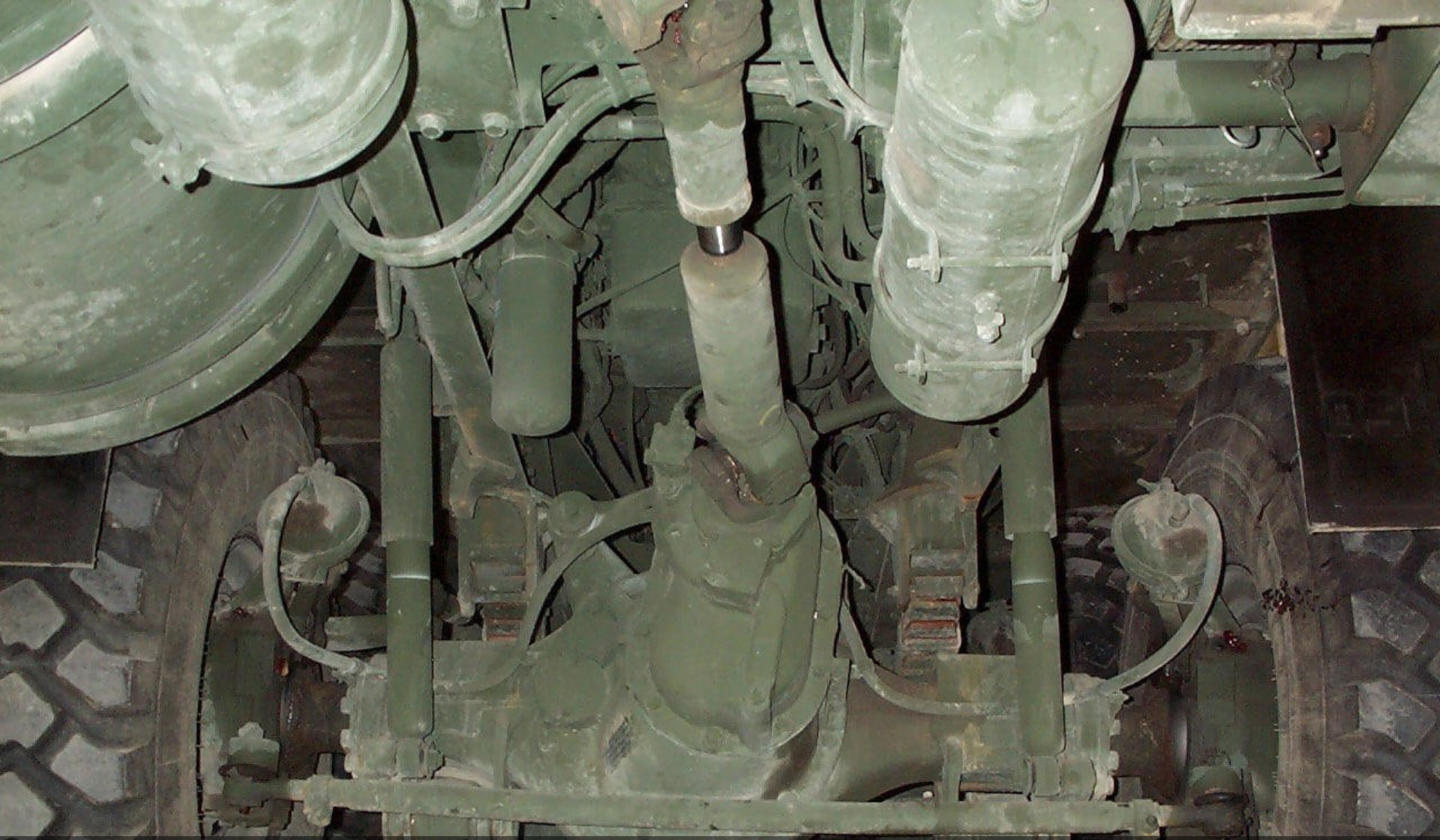
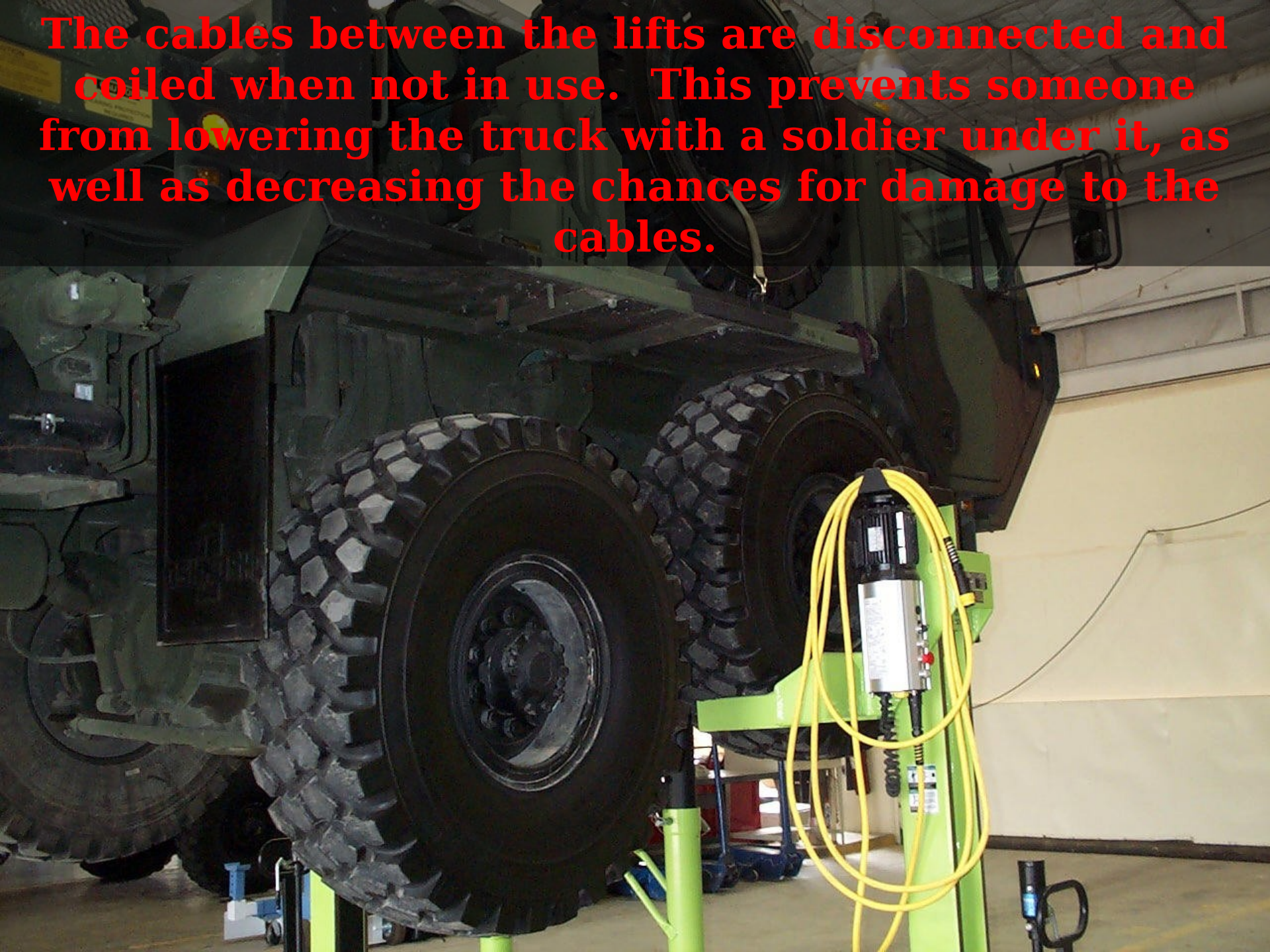


Clearly, the undercarriage is completely accessible with the truck raised. This helps the mechanic check for undercarriage damage, suspension problems, and fluid leaks. It also makes the


The cables between the lifts are disconnected and coiled when not in use. This prevents someone from lowering the truck with a soldier under it, as well as decreasing the chances for damage to the cables.

The following pictures demonstrate the ability to lift an entire HET system.

With 440 volt power, this can be accomplished with eight stands interconnected and controlled from one panel. The 180th Transportation Battalion's facility has 220 volt power which means that two independent lift systems must be used. The lifts raising the trailer are controlled by one soldier while the tractor lifts are controlled by another.

This procedure is simply a demonstration under the supervision of ARI-HETRA and will not be done routinely as part of the Model Services Motorpool.

Step by Step Review

First, the HET system is arranged so the tractor and trailer are in-line and so the trailer wheels are

Next, soldiers place the lifts on the tractor tires and under the trailer deck. The trailer lifts will then be raised independently until they are in contact with

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Because of the difference in height, the trailer lifts must be raised independently to the lower edge of the deck. The trailer brakes must be release to

Finally, the tractor and trailer are lifted

WARNING
REAR SWINGS WIDE
WARNING
REAR SWINGS WIDE

The lifting height of the HET tractor is limited by the trailer in this example. When raised without the trailer, it will be able to go to the full height of

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Training & Safety

Classes were given my ARI-HETRA prior to allowing soldiers to use any of the lifting equipment. Their class consisted of a one hour block of instruction and covered topics such as operation, equipment safety features, and servicing.

Mechanics who attended the class and demonstrated an ability to operate the equipment safely will be licensed on a DA Form 346/5984-E.

The lifts will be marked and inputted into the ULLS-G system to track services and load testing. Load testing is not mandated by the manufacturer because the lifts are screw operated rather than hydraulic. However, the unit will routinely test the equipment by supporting a vehicle

ARI-HETRA demonstrates how to raise the HET tractor and trailer as part of it’s class.

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Thanks to CPT John Cooper, Fort Hood Texas

MSMP PROJECT - OFFICIAL YEAR LONG STUDY 10/1/99 - 9/30/00
13TH COS COM FORT HOOD, TEXAS
USING THE ARI HETRA MOBILE LIFTING SYSTEM

VEHICLE TYPE	SERVICE PERFORMED	(STANDARD) MAC TIME	(SUPERVISED) MSMP TIME AVERAGE PER VEHICLE SERVICED	MSMP VEHICLES SERVICED	TOTAL MAC HOURS ALLOWED	TOTAL MSMP HOURS USED	HOURS SAVED	% SAVINGS
M1070 HET	ANNUAL	56 HOURS	10 HOURS 7 MINUTES	23	1288	232.7	1055.3	81.90%
M1070 HET	SEMI-ANNUAL	47 HOURS	9 HOURS 6 MINUTES	16	752	146.1	605.9	80.60%
M1000 TRAILER	ANNUAL	59 HOURS	29 HOURS 5 MINUTES	32	1888	930.7	957.3	50.70%
M978 HEMMT	ANNUAL	34 HOURS	13 HOURS 14 MINUTES	2	68	26.5	41.5	61.00%
M984E1 HEMMT	ANNUAL	36 HOURS	9 HOURS 1 MINUTE	1	36	9	28	76.30%
M939 5 TON	ANNUAL	26 HOURS	10 HOURS 42 MINUTES	23	529	246.1	282.9	53.50%
M998 HMMWV	ANNUAL	20 HOURS	9 HOURS 46 MINUTES	1	20	9.8	10.2	51.00%
M998 HMMWV	SEMI-ANNUAL	16 HOURS	7 HOURS 2 MINUTES	5	80	36.7	43.3	54.10%
			TOTALS	103	4863	1837.6	3026.4	84.90%

MAC = MAINTENANCE ALLOCATION CHART
MSMP = MODEL SERVICE MOTOR POOL
MSMP PROJECT - OFFICIAL YEAR LONG STUDY 10/1/99 - 9/30/00

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